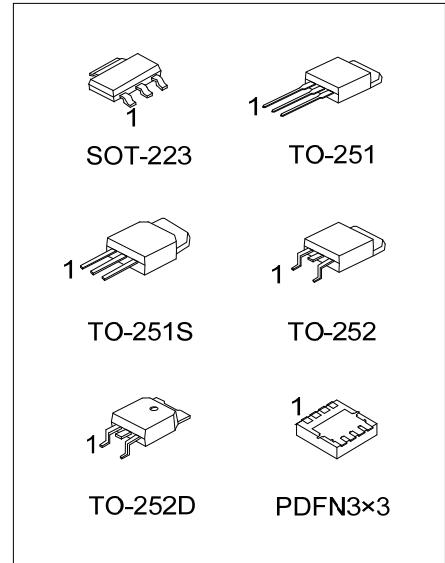
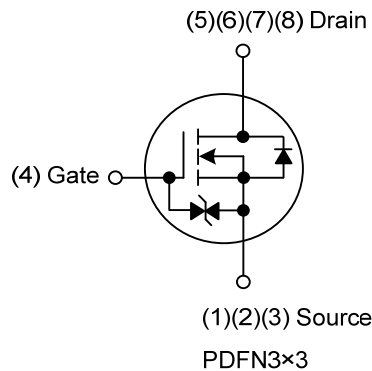
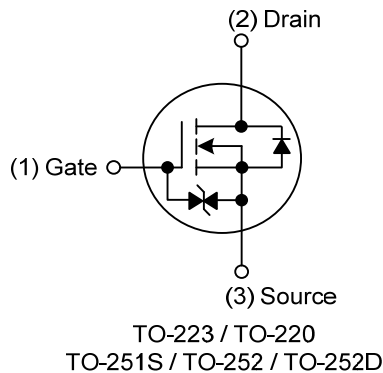


**UF3N25Z****Power MOSFET****3.0A, 250V N-CHANNEL
POWER MOSFET****DESCRIPTION**

The UTC **UF3N25Z** is an N-channel enhancement mode Power MOSFET using UTC's advanced technology to provide customers with a minimum on-state resistance, low gate charge and superior switching performance.

FEATURES

- * $R_{DS(ON)} \leq 2.0 \Omega$ @ $V_{GS}=10V$, $I_D=3.0A$
- * High switching speed
- * Typically 3.2nC low gate charge
- * 100% avalanche tested

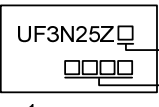
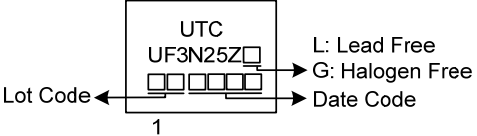
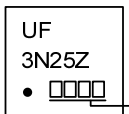
SYMBOL**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UF3N25ZL-AA3-R	UF3N25ZG-AA3-R	SOT-223	G	D	S	-	-	-	-	-	Tape Reel
UF3N25ZL-TM3-T	UF3N25ZG-TM3-T	TO-251	G	D	S	-	-	-	-	-	Tube
UF3N25ZL-TMS-T	UF3N25ZG-TMS-T	TO-251S	G	D	S	-	-	-	-	-	Tube
UF3N25ZL-TN3-R	UF3N25ZG-TN3-R	TO-252	G	D	S	-	-	-	-	-	Tape Reel
UF3N25ZL-TND-R	UF3N25ZG-TND-R	TO-252D	G	D	S	-	-	-	-	-	Tape Reel
UF3N25ZL-P3030-R	UF3N25ZG-P3030-R	PDFN3x3	S	S	S	G	D	D	D	D	Tape Reel

Note: Pin Assignment: G: Gate D: Drain S: Source

UF3N25ZG-AA3-R	(1)Packing Type	(1) R: Tape Reel, T: Tube (2) AA3: SOT-223, TM3: TO-251, TMS: TO-251S TN3: TO-252, TND: TO-252D, P3030: PDFN3x3 (3) G: Halogen Free and Lead Free, L: Lead Free
	(2)Package Type	
	(3)Green Package	

MARKING

PACKAGE	MARKING
SOT-223	 1 L: Lead Free G: Halogen Free Date Code
TO-251 / TO-251S TO-252 / TO-252D	 Lot Code UTC UF3N25Z 1 L: Lead Free G: Halogen Free Date Code
PDFN3×3	 UF 3N25Z • □□□□ Date Code

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	250	V
Gate-Source Voltage		V _{GSS}	±20	V
Continuous Drain Current	Continuous	I _D	3	A
	Pulsed	I _{DM}	6	A
Avalanche Energy		E _{AS}	73	mJ
Power Dissipation	SOT-223	P _D	1.92	W
	TO-251/TO-251S		40	W
	TO-252/TO-252D			
	PDFN3×3		17.5 (Note 2)	W
Junction Temperature		T _J	+150	°C
Storage Temperature Range		T _{STG}	-55 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Repetitive Rating: Pulse width limited by maximum junction temperature.

3. L = 30mH, I_{AS} = 2.2A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C.

4. I_{SD} ≤ 3.0A, di/dt ≤ 200A/μs, V_{DD} ≤ V_{(BR)DSS}, T_J = 25°C.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ _{JA}	140	°C/W
	TO-251/TO-251S		110	°C/W
	TO-252/TO-252D			
	PDFN3×3		130 (Note)	°C/W
Junction to Case	SOT-223	θ _{JC}	65	°C/W
	TO-251/TO-251S		3.12 (Note)	°C/W
	TO-252/TO-252D			
	PDFN3×3		7.14 (Note)	°C/W

Note: Device mounted on FR-4 substrate P_C board, 2oz copper, with 1inch square copper plate.

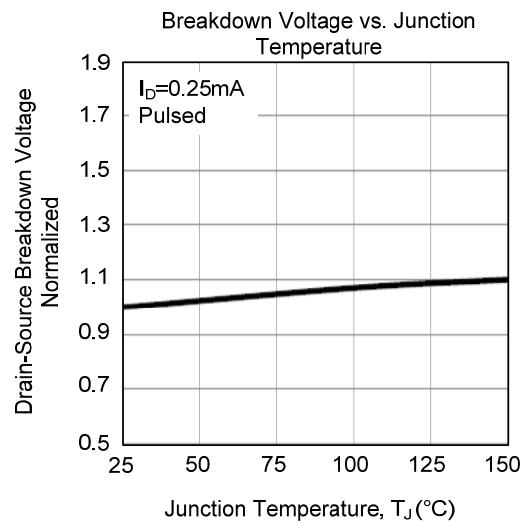
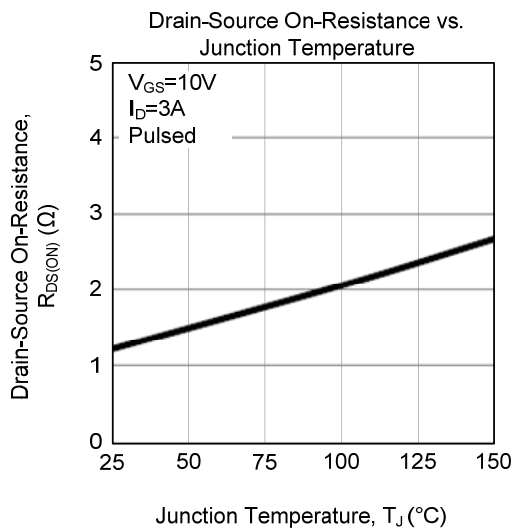
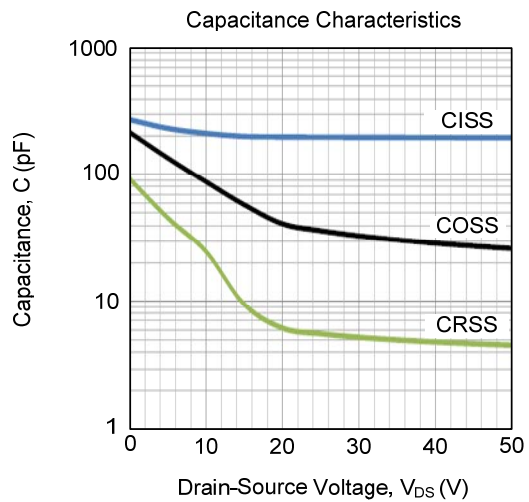
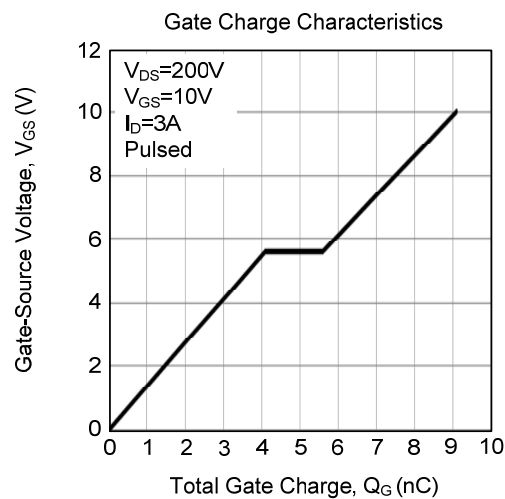
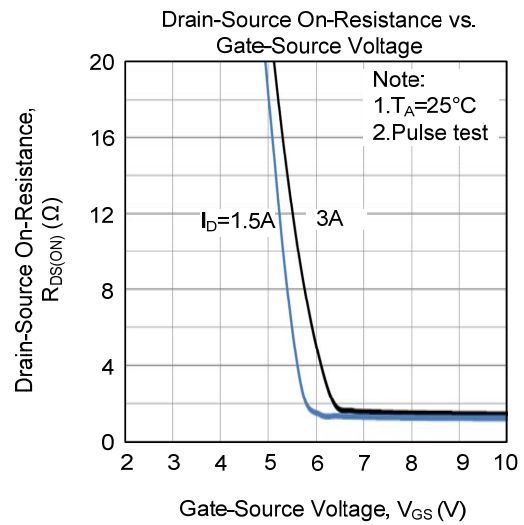
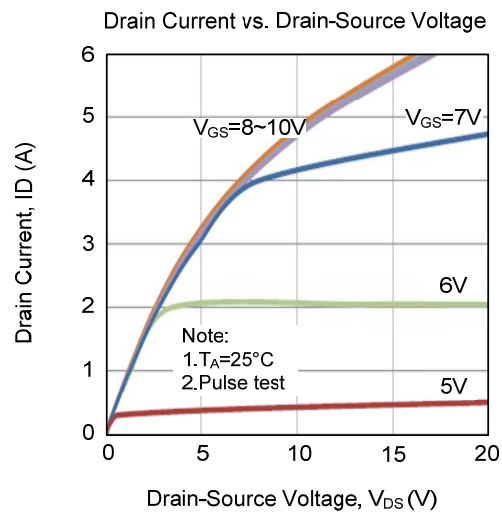
■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =0V	250			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =250V			10	μA
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			10	μA
	Reverse		V _{GS} =-20V, V _{DS} =0V			-10	μA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	I _D =250μA, V _{DS} =V _{GS}	2.0		4.0	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =3.0A			2.0	Ω
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1MHz		197		pF
Output Capacitance		C _{OSS}			36		pF
Reverse Transfer Capacitance		C _{RSS}			6		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{DD} =200V, V _{GS} =10V, I _D =3.0A, I _G =1mA (Note 1, 2)		9		nC
Gate to Source Charge		Q _{GS}			4		nC
Gate to Drain Charge		Q _{GD}			1		nC
Turn-ON Delay Time		t _{D(ON)}	V _{DD} =100V, V _{GS} =10V, I _D =3.0A, R _G =25Ω (Note 1, 2)		5		ns
Rise Time		t _{rr}			17		ns
Turn-OFF Delay Time		t _{D(OFF)}			13		ns
Fall-Time		t _f			17		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Continuous Drain-Source Diode Forward Current		I _s				3	A
Maximum Pulsed Drain-Source Diode Forward Current		I _{SM}				12	A
Drain-Source Diode Forward Voltage		V _{SD}	I _s =3.0A			1.3	V
Reverse Recovery Time (Note 1)		t _{rr}	I _s =3.0A, V _{GS} =0V,		113		ns
Reverse Recovery Charge		Q _{rr}	dI _F /dt=100A/μs		0.5		μC

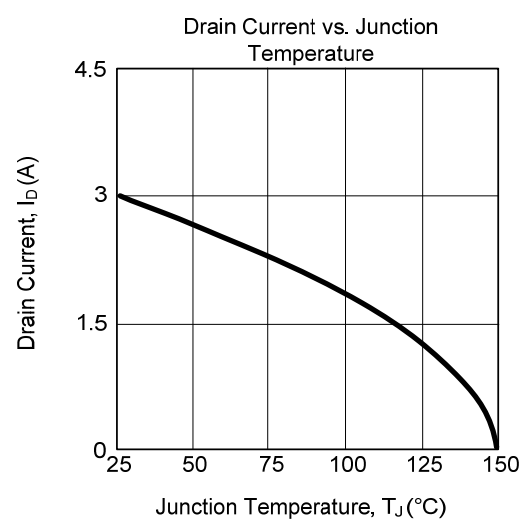
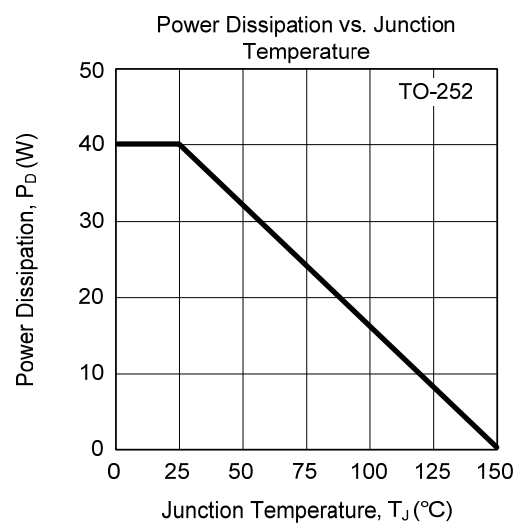
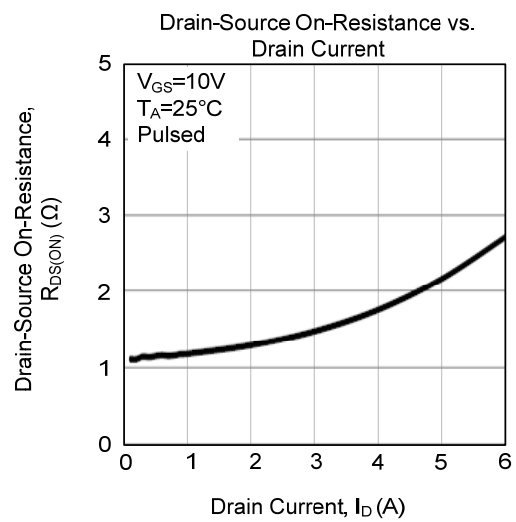
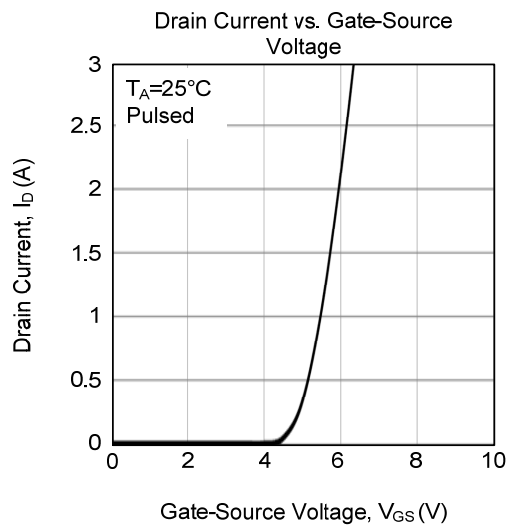
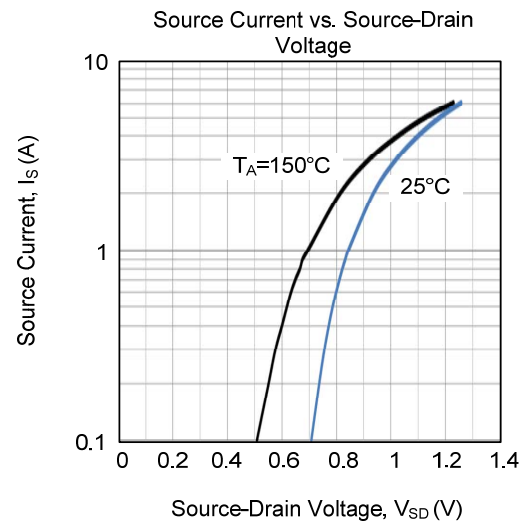
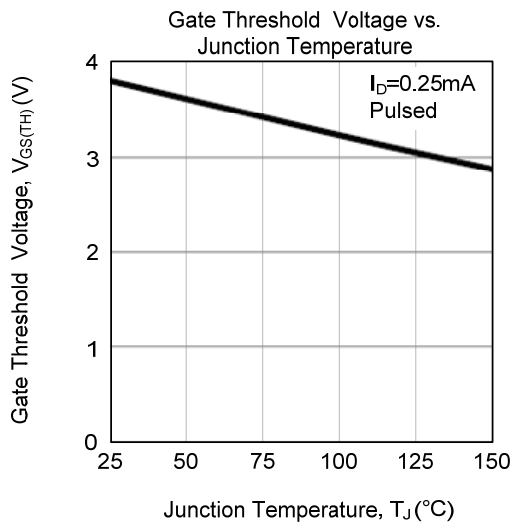
Notes: 1. Pulse Test: Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

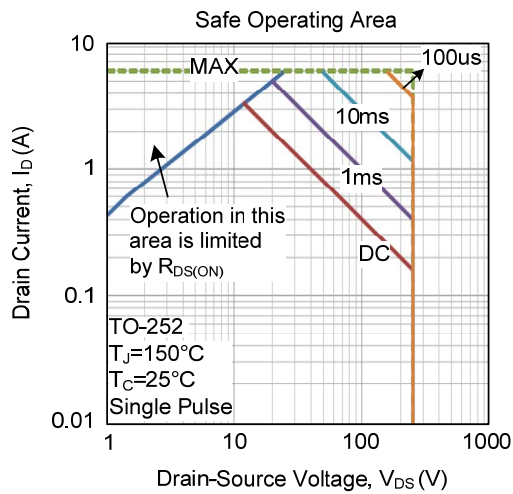
TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



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